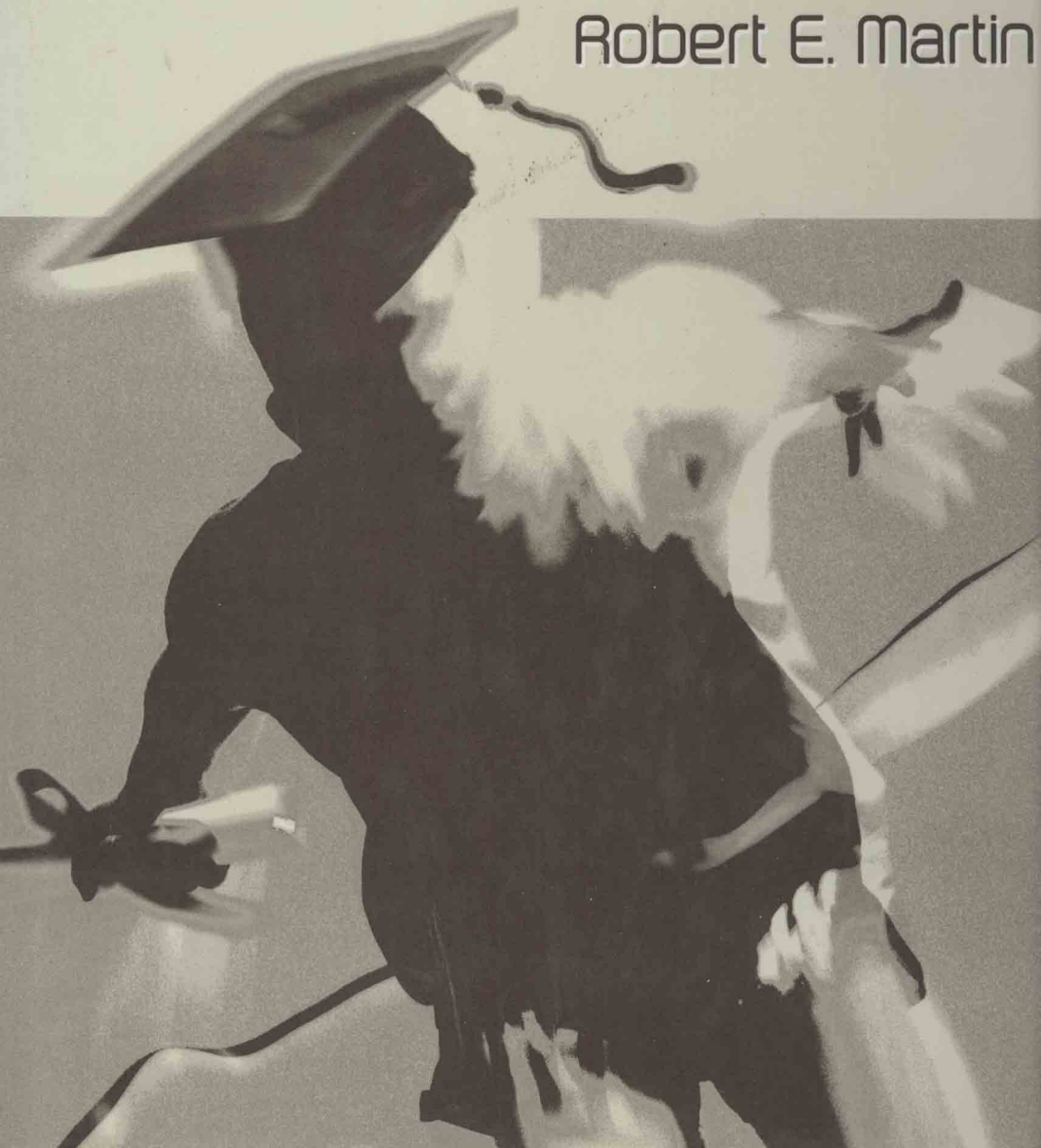
# Cost Control, College Access, and Competition in Higher Education

Robert E. Martin



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# Foreword

I have several related objectives in mind for this book. The first is to present an integrated model of the representative higher education institution where the institution's objective is the maximization of quality reputation. Sound public policy comes with a clear understanding of the institution's objectives and the institution's internal incentive structure. In the absence of a clear model of the representative institution public policy may have unintended consequences or inefficient results. The robust industrial organization literature rests on a well crafted theory of the profit maximizing firm. The literature that might be described as the 'college organization' literature is sparse and under-developed at best. An important reason for this lack of development is the absence of an enterprise model for higher education institutions.

The second objective is to explore the relationship between the college access problem and college cost control. College attendance and completion rates among minority students are less than the rates for white students and attendance and completion rates are less for low income students than for high income students. The lower rates are due to financial constraints, lack of preparation, and cultural differences. The financial aspects of college access are almost always discussed in terms of the need for more subsidies to higher education, while the direct contribution that college cost control makes to the financial access issue is ignored or given passing acknowledgement. The evidence suggests that tuition increases, net of scholarships, are a rising burden for students and their families, that there are multiple causes for these cost increases, and that the higher education community bears a significant responsibility for not controlling these costs.

The third objective is to frame a particular public policy issue: what type of competition among higher education institutions is socially optimal? Since cooperation is a necessary condition for the private provision of public goods, does this suggest that something other than unconstrained pure competition among institutions is optimal? If pure competition is preferred, why do we encourage cooperation among charities? Should colleges be encouraged to practice more price discrimination in order to reallocate public subsidies away from merit aid to more need based aid? Do endowments have anticompetitive effects? There are more questions than answers in this last part of the book.

## AN ENTERPRISE MODEL

In the modern economy, production takes place within a variety of different types of institutions. Clearly, the profit maximizing firm is the most famous and extensively studied type of producer institution. However, there are more types of producing institutions than just the traditional profit maximizing firm, and the variety is greater than the simple distinction between the commercial, non-profit, and government sectors. Charities, group professional practices, share cropping, franchising, producer cooperatives, and a variety of government organizations are examples of producer institutions that account for a considerable share of annual GDP. Obviously, higher education institutions represent one form of producer institution that differs significantly from the traditional profit maximizing firm and they make a substantial annual contribution directly and indirectly to GDP. If the set of all producer institutions is the enterprise set, then the theory of the firm is the enterprise model for-profit maximizing firms.

Some of the alternative forms may behave as if they are profit maximizing institutions, but others do not. The incentive structures within these institutions are different and it follows that they respond differently to economic influences. Therefore, it does not follow that public policies designed for-profit maximizing firms or industries are appropriate for charities, health care, or higher education.

A common feature among all types of institutions that survive for any extended period of time is that they have some optimal properties. Their actions are consistent with some objective rather than being simply the product of random actions and reactions. The survivor principle provides strong evidence that these institutions have rational foundations. Hence, the first step in understanding any of the alternative sectors is to correctly specify their objective function. A robust industry theory cannot be developed before an enterprise model[1] is developed. One cannot model the industry, either in a neoclassical or game theoretic model, until one has a coherent enterprise model for the representative institution. The enterprise model for the representative institution is the foundation on which industry models are constructed.

The economic theory of higher education is relatively under-developed as compared to, say, the theory of the profit maximizing firm. The complex nature of the higher education governance structure causes abundant ambiguity about higher education objective functions. My intention here is not to develop an industry model. At this point, I am only interested in an integrated model of the representative institution, and even that is incomplete, since I make no attempt to model the research function of major universities.

The foundation for the development of a model is laid in Chapter 2, where I explore the similarities between the profit maximizing firm and the typical

higher education institution. There are many similarities and many differences. The most significant similarity is that both types of institution must balance their cash outflows with cash inflows in the long-run. This means they are both subject to very similar economic forces, such as risk, transactions cost, production technology, and the distribution of asset ownership. These are the same forces that help us understand the origin and internal structure of the profit maximizing firm. They also have implications for the economic origin and internal structure of higher education institutions. This discussion has little to do with the historical or cultural foundations of colleges and universities; it is entirely in terms of the economic foundations of colleges and universities.

Chapters 3, 4, and 5 represent component parts of the enterprise model for the representative institution. In Chapter 3, I present a production and cost model where the institution's cost function is derived from a human capital production technology where students are both customers and inputs. Since the output is human capital, the implicit cost is a function of the number of students enrolled and the quality of the human capital imparted to the average student. The long-run cost function depends on enrollment and the institution's quality reputation. The quality adjusted cost function implies that minimum efficient scale occurs at a lower enrollment level than one would observe in a cost function that does not control for quality, and this explains why most private institutions do not exploit all returns to scale available from enrollment.

In Chapter 4, I consider the charity market and its impact on subsidies for higher education. Donors may contribute to higher education because they wish to subsidize the production of human capital or because they wish to signal wealth. Institutions seek to accumulate endowments in order to produce more human capital and in order to provide a hedge against both systematic risk and institution-specific risk. In a model where donors wish to signal wealth or status, I demonstrate that the implicit net revenue function from fundraising is a function of the institution's quality reputation as well as the cost of fundraising inputs. In the long-run, endowment revenues depend on the institution's quality reputation.

Chapter 5 contains an intergenerational model for the representative institution. The long-run cost function used in this model comes from Chapter 3 and the long-run net revenue function from fundraising comes from Chapter 4. The institution's objective is to maximize its quality reputation. During the annual enrollment cycle the institution enrolls the highest quality students it can support and during the following production cycle it maximizes the human capital it imparts to students. In the long-run, the institution's quality reputation depends on the success of its alumni. Long-run stationary state equilibrium is derived and a number of useful pricing hypotheses are derived.

## COLLEGE COST AND COLLEGE ACCESS

The prices paid for college by students are like automobile and housing prices, they are composed of a list price and, in most cases, a negotiated transaction price. The differences lead to considerable confusion among journalists who report on higher education and this leads to confusion among the public. The average transaction price is equal to tuition and fees less scholarships and discounts. The real transaction price is the correct measure of the financial burden imposed on students and their families over time. The historical record explored in Chapter 1 reveals that the real transaction price for college increased steadily over the past three decades, although there is some recent evidence that the real transaction price at public institutions declined during the last three years.

The real price of many products and services increased during the last three decades, so the relevant question for college costs is: were those cost increases excessive? The record reveals that the rate of college cost increases has exceeded virtually every other rate of cost increase, including health care costs, when compared to the cost of private higher education. Costs appear to have risen because of the demand for new services from higher education, unfunded government mandates, mission creep[2], lower productivity, excessive overhead, resistance to new technology, and inflated administrator salaries. While administrator salaries compose a small fraction of each institution's total cost, their size relative to faculty and staff salaries precludes any serious conversation about cost control between administrators and the rest of the campus. Campus leaders who ask others to sacrifice while they are handsomely compensated have no credibility. All of the foregoing cost increases threaten the three-way social contract between succeeding generations and the education community.

Since there are no residual claimants, agency problems are more severe in higher education than they are in the typical publicly held profit maximizing firm. The pursuit of agency rents causes expenditures to rise as soon as revenues rise. This is the commonly noted budgetary slack model, or what Ron Ehrenberg calls the higher education 'cookie monster' that gobbles up resources wherever they may be discovered. The evidence in Chapter 6 suggests that revenue increases tend in time to precede increases in college costs; whenever revenues increase, a budgetary slack is created and that slack is filled by increases in expenditures. In the perfectly competitive profit maximizing industry, increasing costs tend to drive prices higher, while increasing demand and rising prices cause costs to rise only if it is an increasing cost industry.

The lack of effective cost control in higher education, the importance of third parties who pay for a significant share of each student's education and the budgetary slack phenomenon significantly limit the ability of public subsidies

to resolve the college access problem. Whenever public subsidies increase, the student's 'ability to pay' for higher education increases, and colleges and universities move to capture part of that subsidy by increasing tuition and fees. An increase in expenditures soon follows the increase in tuition and fees. The increase in tuition and fees offsets at least part of the gains in access and the increase in expenditures is used to justify further increases in tuition and fees. In other words, a permanent fix for the financial constraints aspect of the college access problem is not possible until the higher education cost control problem is resolved. The college access problem is discussed in detail in Chapter 7.

## COOPERATION AND COMPETITION

Public attitudes towards cooperation and competition among higher education institutions have changed significantly since the end of World War II. The change in attitudes culminated in the Justice Department's action against the 'Overlap Group' in the early 1990s. In the early 1950s the elite east coast institutions began to meet to consider students whose applications overlapped several institutions, the purpose being to set scholarship awards for these students such that the net price to the student was the same for each institution. They defended this practice by arguing the student could then choose which institution to attend on the basis of the quality of their programs. The Overlap Group sought to limit price competition and to promote quality competition. The settlement with the Justice Department was followed by aggressive tuition discounting throughout private higher education. The most vigorous competition was for gifted students, and as a result merit financial aid increased at the expense of need based aid. Since list prices were increasing and need based aid was decreasing during this period, college completion rates among low income and minority students stagnated and fell. These trends are discussed in more detail in Chapters 2 and 7. Since the representative institution's long-run objective is to maximize its reputation and that reputation depends on the accomplishments of its alumni, these results are predictable.

It is ironic that the public and the Justice Department tolerate and encourage cooperation among professional sports teams where the purpose of that cooperation is to limit salary competition for the best athletes, even though professional sports teams are clearly for-profit institutions and they do not produce public goods or services. The justification given for this differential treatment is that cooperation is required to promote 'competitive balance' among the teams. The argument is that without cooperation, the wealthiest teams would dominate the leagues. It is clear, however, that free entry into franchised areas would render the wealth of incumbent teams a temporary advantage at best.

Alternatively, consider the issue of 'competitive balance' and entry condi-

tions among higher education institutions. Higher education institutions compete for the best students just as professional sports teams compete for the best athletes. However, colleges and universities provide services with significant spillover effects, while the public good character of professional sports teams is dubious at best. Even with a substantial endowment, it is improbable that a new entrant could crack the top ranks of higher education institutions, since status as an academic institution is conferred by successful alumni and that normally takes decades. Therefore, the threat of entry is impotent and competitive balance among institutions is an appropriate public policy issue. The exclusivity of the elite institutions increases as time passes, as their number and size remain the same and as the domestic population continues to grow. These trends lead to tournament-style results in the income distribution, and the rising income inequality leads to dynastic wealth and to dynastic poverty.

## NOTES

1. The competitive and monopoly firm models represent enterprise models for the profit maximizing firm, just as output maximization subject to a budget constraint represents the enterprise model for the Soviet style enterprise, and public choice models are enterprise models for government institutions.
2. The term mission creep refers to the tendency of all higher education institutions to change their mission. Two-year institutions want to become four-year institutions, baccalaureate institutions want to add graduate programs, and those with graduate programs want to become research institutions. This leads to a proliferation of mediocre programs and rising cost.

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# 1. The social contract

*Whoso neglects learning in his youth,*
*Loses the past and is dead for the future.*

Euripides (480? – 406 BC)
Phrixus

## 1.1 INTRODUCTION

The responsibility one generation feels toward those that follow is a valuable public asset. It shapes public and private behavior in subtle and significant ways. The degree to which the current generation is willing to sacrifice for the benefit of future generations is the measure of this sense of responsibility. It shapes public policy on the environment, education, and economic security. Some argue that this commitment is weaker today than in the past. For instance, it is possible to interpret the rise in real Social Security benefits, the looming fiscal crisis in that program and the lack of political will to fix the problem as a weakening of the social commitment between generations. The current elder generation seems prepared to lead a more comfortable life at the expense of today's young adults and their children. Some may also argue that high government deficits[1] are also evidence of a weaker commitment.

It appears the social commitment between generations with respect to higher education is at least strained and at worse may be coming undone. The principal reason why this commitment is in trouble is because higher education costs have been rising faster than costs in every other sector of the economy, with the possible exception of health care. The public burden imposed by the dual cost trends in education and health care is substantial. Rising tuition rates place a higher burden on students, their families, and the public who supply the subsidies that are an important part of higher education financing.

Our understanding of what causes systemic real increases in education costs is incomplete and the education establishment all too frequently denies there is a problem. It is a fact that productivity growth is slower in the service sector than in manufacturing industries, but the rate of productivity growth in higher education appears to have lagged far behind even the rest of the service economy. An important factor in the higher education cost control problem is an under-developed theory of enterprise behavior. An integrated model of the

representative institution does not exist and this makes it difficult to identify the source of the cost control problems, to effectively manage institutions, and to design public policies that enhance productivity growth and control cost. The models in this book are designed to address the lack of goal oriented models of institutional behavior in the economics of higher education. They are offered as management, research, and policy tools to help employ resources more efficiently in higher education.

Higher education faces rising enrollments and these new students are increasingly arriving with greater financial need and weaker academic preparation. Rising global competition is fueled by better educated workers and workers that continue to learn throughout their lifetime. Any country that allows a significant proportion of its population to fall behind in the race for education is committing itself to a smaller middle class, less social mobility, and a highly skewed income distribution. A renewed public commitment to universal access to education at all levels is needed. At the moment, the public has lost trust in higher education's ability to employ resources effectively. Without a change in attitude and a real commitment to reform on the part of higher education, it seems unlikely that the public will be willing to provide the resources required to effectively educate all of the next generation. It is in our collective best interest to find a solution to this dilemma.

## 1.2 THE TRANSFER OF KNOWLEDGE

Each generation invests in the education of the generation that follows. Historically, society's total investment exceeds the private investments made by parents on behalf of their children. This intergenerational social contract is the source of steady improvement in the human condition. The contract is simple: the older generation subsidizes the education of the younger generation with the implicit agreement that the younger generation will do the same for the generation that follows. As population and wealth grow, the contract ensures that a rising stock of human capital will be passed from one generation to the next. Without this commitment the transfer of knowledge and skills from one generation to the next may not take place, since the human capital accumulated by each generation dies with that generation. Without written records and a concerted effort to impart the knowledge to those that follow, the knowledge can be lost. The bonds between parents and their children and between society and its collective children are the bedrock upon which every successful civilization rests. Secular trends in real living standards are driven by the strength of this intergenerational commitment. The historical record is clear; the social contract has produced steady growth in real wealth and in the quality of life in the United States.

At this moment, the social contract is in trouble. Each year, the electronic and the print media contain articles and air reports on the high and rising cost of post-secondary education. These stories have titles such as 'College Tuition Rises 4%, Outpacing Inflation' (Bronner, 1998), 'Cost of four-year Degree Passes $100,000 Mark' (Honan, 1994), 'Why Colleges Cost Too Much' (Larson, 1997), and 'College Tuition Outpaces Inflation Again' (Mabry, 1999). Polls indicate that while the public believes the quality of post-secondary education is high, it costs too much (Crawford, 2003). In response to the public's concern, Congress and President Clinton passed Public Law 105-18 in 1997, which established the National Commission on the Cost of Higher Education. The Commission released its report entitled 'Straight Talk About College Costs and Prices' in 1998. The Commission members state they are

> convinced that if the public concern continues, and if colleges and universities do not take steps to reduce their costs, policymakers at the Federal and state levels will intervene and take up the task for them...continued inattention to issues of cost and price threatens to create a gulf of ill will between institutions of higher education and the larger society. (1998, 1)

The Commissioners also conclude:

> This Commission, therefore, finds itself in the discomfiting position of acknowledging that the nation's academic institutions, justly renowned for their ability to analyze practically every other major economic activity in the United States, have not devoted similar analytic attention to their own internal financial structures. (1998, 17)

It is important to note that the individual Commission members are sympathetic to higher education; they are not individuals with an axe to grind.

The National Commission's report was preceded by a report from the Council for Aid to Education entitled 'Breaking the Social Contract: The Fiscal Crisis in Higher Education', where the Commission on National Investment in Higher Education's recommendation was

> a two-pronged strategy: increased public investment in higher education and comprehensive reform of higher education institutions to lower costs and improve services. The second of these, institutional reform, is in fact a prerequisite for increased public funding. Unless the higher education sector changes the way it operates by undergoing the kind of restructuring and streamlining that successful businesses have implemented, it will be difficult to garner the increases in public funding needed to meet future demands. (1997, 3)

The Council for Aid to Education also states:

> Now that there are stringent fiscal limits on public resources, the government is beginning to ask the same kinds of questions of colleges and universities that it has asked the health care industry – questions about cost, productivity, efficiency, and effectiveness. Until institutions of higher education can provide good answers to such questions, it will be difficult to increase public support and to regain the priority formerly given to higher education in federal, state, and local budgets. (1997, 11)

Other studies followed the National Commission's report and the Council for Aid to Education's report. In 2002, the Lumina Foundation published a study entitled 'Unequal Opportunity: Disparities in College Access Among the 50 States' that concluded college access varies substantially by geography and that very few private institutions were accessible to low income students without incurring burdensome debt that neither they nor their families could afford (Kipp et al., 2002). This study received a sharp reaction from lobbying groups who represent private higher education institutions (Burd, 2002). Still another report was issued by the US House Committee on Education and the Workforce entitled 'The College Cost Crisis' in which one will find some of the harshest criticism yet voiced about the problem of cost control in higher education (Boehner and McKeon, 2003). Recently, spring 2004, rising college costs became a component of Democratic presidential candidate John Kerry's redefinition of the economic 'misery index' and a new commission was established. This new commission is called the National Commission on Accountability in Higher Education and was organized by the State Higher Education Executive Officers association and funded by the Ford Foundation.

Writing for *Business Week*, William C. Symonds observes that

> The democratization of its higher education system was one of America's great 20th century achievements. Before World War II, college was reserved for an elite minority. Since then, generous financial aid programs, coupled with large taxpayer subsidies of public universities and community colleges, helped to usher in a tenfold increase in enrollments. The US became the first nation to embrace mass higher education, gaining an enormous advantage in a world economy that puts increasing value on knowledge workers.
>
> But suddenly, this cornerstone of the US economy is threatened by escalating costs, diminished revenues, and a troubling inability to manage the crisis. (2003, 74)

David Longanecker, who is the executive director of the Western Interstate Commission for Higher Education, observes that 'American higher education is confronting a perfect storm of more limited public resources, increas-